

REMARKS

Claims 1 and 4-6 are currently pending. By this amendment claim 1 is amended and new claims 5 and 6 are added. Support for the amendments is found in the specification, including the claims, as filed. No new matter has been introduced. Favorable reconsideration of the application in light of the following comments is respectfully solicited.

In section 3 of the Office Action, claims 1 and 4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Japanese Patent App. Pub. No. H11-354143 (Saito) in view of U.S. Patent App. Pub. No. 2004/0038098 (Imamura), and U.S. Patent App. Pub. No. 2004/0197614 (Simpson). Applicants respectfully traverse.

The last paragraph of claim 1 recites

wherein said fuel cell system further comprises **means for variably controlling the flow rate of the inert gas supplied to said fuel cell** based on the values of  $P_a$  and  $P_c$  during the purge operation of said fuel cell, **such that the relation  $0 < \Delta P_o \times \Delta P_p$  and  $|\Delta P_p| \leq |\Delta P_o|$  is always satisfied**, where a differential pressure  $\Delta P$  is defined as  $\Delta P = P_a - P_c$ ,  $\Delta P_o$  is the differential pressure during operation, and  $\Delta P_p$  is the differential pressure during the purge operation.

Although the first two Office Actions acknowledged the relation recited above as limiting, the most recent Office Action adopts a different interpretation of the claim, seeking to ignore the limitation altogether. Specifically, page 4, lines 18-21 of the Office Action asserts “with regard to the purge operation and the normal operation of the fuel cell system, the limitations have been considered with regard to structure, but the operation (method) is not given patentable weight.” However, the limitations recited in the last paragraph of claim 1 are limiting on the claimed fuel cell system and are nonobvious in view of the cited art.

35 U.S.C. § 112, paragraph 6 states:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The last paragraph of claim 1 recites an element according to 35 U.S.C. § 112, paragraph

6. Claim 1 is amended to clarify that the means-plus-function element recited in the last paragraph of claim 1 performs a function including “**variably controlling the flow rate of the inert gas supplied to said fuel cell based on the values of  $P_a$  and  $P_c$  during the purge operation of said fuel cell, such that the relation  $0 < \Delta P_o \times \Delta P_p$  and  $|\Delta P_p| \leq |\Delta P_o|$  is always satisfied.**” This specified function is limiting upon the claimed means-plus-function element, and accordingly upon the claimed structure. Thus, the limitations of the last paragraph of claim 1 cannot be ignored, as proposed by the Office Action.

Pages 4-5 of Applicants’ Response filed on October 3, 2008 explains why the cited art fails to render obvious the recited fuel cell system, in which “the relation  $0 < \Delta P_o \times \Delta P_p$  and  $|\Delta P_p| \leq |\Delta P_o|$  is always satisfied, where a differential pressure  $\Delta P$  is defined as  $\Delta P = P_a - P_c$ ,  $\Delta P_o$  is the differential pressure during operation, and  $\Delta P_p$  is the differential pressure during the purge operation,” as recited in claim 1. This rationale remains unchanged, and the cited art fails to render the recited relation obvious.

Further, Imamura does not render obvious the recited “variably controlling the flow rate of the inert gas supplied to said fuel cell based on the values of  $P_a$  and  $P_c$  **during the purge operation of said fuel cell,**” as recited in claim 1. The Office Action asserts that Simpson in view of Imamura renders such limitations obvious, asserting, *inter alia*,

It would have been obvious to one of ordinary skill in the art at the tie of the invention to add the means for measuring pressures at the inlet-side flow paths leading to the anode and the cathode . . . in order to better control the pressure / flow rate and thereby limit the water diffusion from the air electrode side through the electrolyte membrane to the fuel electrode side.

*(page 3, lines 17-22)*

However, Imamura's disclosure is limited to an operation mode of the fuel cell, and offers no suggestion that pressure sensors 71 and 81 would be relevant to a period "during the purge operation of said fuel cell," as recited in claim 1. To the contrary, Imamura discloses

since the water diffusion from the air electrode side through the electrolyte membrane to the fuel electrode side is suppressible through the use of the former pressure control, it is possible to prevent the water residence at the electrode portions of the fuel electrode without purging the fuel electrode or the fuel passage.

*(Imamura, paragraphs [0023], [0025]; see also Imamura, paragraph [0058])*

In other words, by use of the pressure sensors, Imamura *avoids* the use of a purge operation, does not disclose employing inlet-side pressure sensors 71 and 81 for a purge operation, and thus does not suggest that pressure sensors might be employed for "variably controlling the flow rate of the inert gas supplied to said fuel cell based on the values of Pa and Pc *during the purge operation of said fuel cell*," as recited in claim 1. Saito does not bridge this gap between claim 1 and Imamura, as is indicated by the acknowledgement by the Office Action that Saito "fails to teach a means for measuring pressure at the inlet-side flow paths . . . or a means for variably controlling the flow rate of the purge gas." Simpson also fails to bridge this gap.

To assert that the cited art renders obvious the recited "variably controlling the flow rate of the inert gas supplied to said fuel cell based on the values of Pa and Pc during the purge operation of said fuel cell" is speculative at best, not suggested by the cited art, and instead appears to be a product of hindsight bias – use of the Applicants' insight as expressed in the

claims, rather than on the basis of what is disclosed by the prior art, to assert that the cited art would have rendered the limitations obvious.

As the cited art fails to render obvious at least the last paragraph of claim 1, Applicants respectfully request withdrawal of the rejection of claim 1, as well as dependent claims 4-6.

It is urged that the application, as now amended, is in condition for allowance, an indication of which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, Examiner is requested to call the undersigned attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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